

# Group 4: Synthetic biology & human health

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Current capabilities: small light weight COTS conventional medical tech adaptive for space use;

	Mission ideas:	Needed capabilities	Required research & technology development.
5 years	<ul style="list-style-type: none"> <li>-Test Syn bio in microgravity</li> <li>-Dev a repertoire sensing elements incorporated into Syn Org</li> <li>-Microbial ecology assessment</li> </ul>	Kit for analysis of specific DNA seq	<ul style="list-style-type: none"> <li>-ground based research to identify the basis for individual variability and susceptibility to diseases</li> <li>-large scale testing of bio-building blocks and their</li> </ul>
15 years	<ul style="list-style-type: none"> <li>-Reprogrammable drug delivery patch</li> <li>-Engineering probiotics as radiation protectants</li> <li>-Syn bio elements for delivery of therapeutics for acute radiation</li> </ul>	Patch tech for space applications Encapsulation tech for synbio implantation	
30 years	<ul style="list-style-type: none"> <li>-Gene knockdown</li> <li>-Stem cell therapy</li> <li>-Preventive reprogramming of crew genome</li> </ul>	RNAi tech	

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Current capabilities:

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	Mission ideas	Needed capabilities	Required research & technology development
<b>5 years</b>			

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	Mission ideas	Needed capabilities	Required research & technology development
<b>15 years</b>			

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	Mission ideas	Needed capabilities	Required research & technology development
<b>30 years</b>			

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	Mission ideas	Needed capabilities	Required research & technology development
> 30 years			